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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/701,051

Applicant(s)

CHENG, CHUN-FAI

Examiner

Jeff Piziali

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-10,12,16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-7,9,10,12,16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 June 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: ***R5, R6, R9, R10, R15, and R16*** (*see page 9, lines 21-23 of the specification*).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. *Claims 1, 3, 5-7, 9, 10, 12, 16, and 17* are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Claim 1 recites the subject matter: "***a counter receiving video signal gray level data and in response counting for a time interval proportional to said gray level data***" (lines 4-5) and "***a column driver receiving the ramping voltage and in response applying alternating polarity driving pulses to the columns of said dielectric electroluminescent display***" (lines 13-15).

Claim 16 further specifies, "***said column driver comprises a counter and a sample-and-hold circuit***" (lines 1-2).

The Specification teaches that the column driver comprises the counter (*see page 8, lines 24-25 of the Substitute Specification filed on 23 August 2007*).

The Specification does not teach the presence of more than one counter.

The Specification also does not teach alternating polarity driving pulses to the columns of said dielectric electroluminescent display.

The Specification instead states, "***each of the display column drivers has a unipolar output***" (*see page 7, lines 17-18 of the Substitute Specification filed on 23 August 2007*).

Therefore, the subject matter of both a counter and a separate column driver, as instantly claimed, is not supported by the instant Specification.

4. *Claims 1, 3, 5-7, 9, 10, 12, 16, and 17* are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

The claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites the subject matter: "***a counter receiving video signal gray level data and in response counting for a time interval proportional to said gray level data***" (lines 4-5) and "***a column driver receiving the ramping voltage and in response applying alternating polarity driving pulses to the columns of said dielectric electroluminescent display***" (lines 13-15).

Claim 16 further specifies, "***said column driver comprises a counter and a sample-and-hold circuit***" (lines 1-2).

The Specification teaches that the column driver comprises the counter (*see page 8, lines 24-25 of the Substitute Specification filed on 23 August 2007*).

The Specification is not enabled for more than one counter.

The Specification also is not enabling for alternating polarity driving pulses to the columns of said dielectric electroluminescent display.

The Specification instead states, "***each of the display column drivers has a unipolar output***" (*see page 7, lines 17-18 of the Substitute Specification filed on 23 August 2007*).

Therefore, the subject matter of both a counter and a separate column driver, as instantly claimed, is not enabled by the instant Specification.

5. The remaining claims are rejected under 35 U.S.C. 112, first paragraph, as being dependent upon rejected base claims.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. *Claims 1, 3, 5-7, 9, 10, 12, 16, and 17* are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 1 recites the limitation "*the intersections*" (*lines 2-3*). There is insufficient antecedent basis for this limitation in the claim.

9. Claim 1 recites the limitation "*video signal gray level data*" (*line 4*). The lack of a grammatical article (such as "*a*" or "*a plurality of*" or "*the*" or "*said*") preceding the limitation renders it unclear whether the claim is establishing a new element; or instead referring back to some preestablished limitation.

For example, it would be unclear to an artisan whether a single element of "*data*" is being claimed; or rather whether a plurality of "*data*" elements are being claimed.

10. Claim 16 recites the limitation "*said column driver*" (*line 1*). There is insufficient antecedent basis for this limitation in the claim.

It would be unclear to one having ordinary skill in the art whether this limitation is intended to refer to the earlier recited, "*gray scale column driver circuit*" (*claim 1, line 1*) and/or the "*column driver*" (*claim 1, line 13*).

11. The remaining claims are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon rejected base claims.

12. The claims are rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

As a courtesy to the Applicant, the examiner has attempted to also make rejections over prior art -- based on the examiner's best guess interpretations of the invention that the Applicant is intending to claim.

However, the indefinite nature of the claimed subject matter naturally hinders the Office's ability to search and examine the application.

Any instantly distinguishing features and subject matter that the Applicant considers to be absent from the cited prior art is more than likely a result of the indefinite nature of the claims.

The Applicant is respectfully requested to correct the indefinite nature of the claims, which should going forward result in a more precise search and examination.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(c), (f) or (g) prior art under 35 U.S.C. 103(a).

15. *Claims 1, 3, 5-7, 9, 10, 12, 16, and 17* are rejected under 35 U.S.C. 103(a) as being unpatentable over *Yeo (US 6,049,320 A)* in view of *Koyama et al (US 6,380,919 B1)*, *Maurice (US 6,844,874 B2)*, *Cheng (WO 01/61677 A1)*, *Stewart et al (US 6,417,825 B1)*, and *Uskali et al (US 5,440,208 A)*.

Regarding claim 1, *Yeo* discloses gray scale column driver circuit [e.g., *Fig. 1*] for an alternating current dielectric liquid crystal display comprising rows, columns and pixels at the intersections of said rows and columns,

said column driver circuit comprising:

a counter [e.g., *Fig. 1: 2*] receiving video signal gray level data [e.g., *Fig. 1: digital data incoming from register 1*] and in response counting for a time interval proportional to said gray level data [e.g., *Fig. 2B: producing pulse width modulated output*];

a non linear analogue voltage ramp generator [e.g., *Fig. 1: ramp signal line A*] connected to said counter,

said non linear analogue voltage ramp generator outputting a ramping voltage [e.g., *Fig. 2A*] during said time interval,

wherein said ramping voltage conforms to a curve having an initial convex portion followed by a concave portion,

wherein said initial convex portion conforms to a negative second derivative with respect to said time interval, and

said concave portion conforms to a positive second derivative with respect to said time interval; and

a column driver [*e.g.*, *Fig. 1: C*] receiving the ramping voltage and in response applying alternating polarity driving pulses to the columns of said display,

wherein said ramping voltage determines a maximum voltage of the alternating polarity driving pulses applied to the columns of said display (*see the entire document, including Figs. 2A & 2B; Column 1, Lines 5-64*).

Should it be shown that **Yeo** discloses a *column driver*, as instantly claimed, with insufficient specificity:

Koyama discloses gray scale column driver circuit [*e.g.*, *Fig. 7A*] for an alternating current dielectric electroluminescent display (*e.g.*, *see Column 1, Lines 5-15; Claims 3, 6, 9*) comprising rows [*e.g.*, *Fig. 7A: 710*], columns [*e.g.*, *Fig. 7A: 711*] and pixels [*e.g.*, *Fig. 7A: 712*] at the intersections of said rows and columns,

said column driver circuit comprising:

a column driver [*e.g.*, *Fig. 7A: 706-708*] receiving a ramping voltage [*e.g.*, *Fig. 7A: 713*] and in response applying alternating polarity driving pulses [*e.g.*, *see Figs. 9A-E*] to the columns of said dielectric electroluminescent display (*e.g.*, *see Column 4, Lines 43-55*),

wherein said ramping voltage determines a maximum voltage of the alternating polarity driving pulses applied to the columns of said dielectric electroluminescent display (*see the entire document, including Figs. 2A & 2B; Column 6, Line 28 - Column 12, Line 25*).

Yeo and **Koyama** are analogous art, because they are from the shared inventive field of gray scale column driver circuits for displays.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to combine **Koyama's** electroluminescent display polarity inverting column driver with **Yeo's** gray scale column driver circuitry, so as to prevent image degradation.

Should it be shown that the combination of **Yeo** and **Koyama** discloses an *alternating current dielectric electroluminescent display*, as instantly claimed, with insufficient specificity:

Maurice discloses a non linear analogue voltage ramp generator outputting a ramping voltage [*e.g., Fig. 3; Data Ramp/Line L'i*] that is used during driving of columns [*e.g., Figs. 2, 4; Data Ramp/Line L'i*] of either a liquid crystal display [*e.g., Fig. 2*] or an alternating current electroluminescent display [*e.g., Fig. 4*] (*see the entire document, including Column 5, Lines 24-29*).

Yeo, **Koyama** and **Maurice** are analogous art, because they are from the shared inventive field of voltage ramp generators for display devices.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use **Yeo's** a gray scale column driver with an electroluminescent display such as

the one taught by *Maurice*, so as to provide a conventional data driver for use with a commercially popular, alternate display type.

The Applicant alleges, *"it would not be possible to apply the Yeo voltage directly to the columns of an electroluminescent display due to the need to recover and re-use energy associated with charging the very large and highly variable capacitance resulting from capacitive coupling to pixels in non-addressed rows in the dielectric electroluminescent display. The variability of the capacitance is due to large differences in the capacitive coupling between rows and columns of the electroluminescent display in response to different image patterns. Please see U.S. Patent Application Nos. 09/504,472 [aka WO 01/61677 A1] and 10/036,002, both of which are incorporated by reference into the specification, for an explanation of this phenomenon. These applications describe how the above-noted energy is recovered and fed to the electroluminescent display on the next video frame during addressing of a thick dielectric layer electroluminescent display using a switched sinusoidal voltage waveform fed through a step down transformer"* (see page 7 of the Response filed on 22 March 2010).

Therefore, *Cheng* has been incorporated into the rejection as teaching the alleged required energy recovery circuitry (see the entire document, including pages 7-13) that would allow *Yeo's* voltage application techniques to be applicable to an electroluminescent display.

Yeo, Koyama, Maurice and *Cheng* are analogous art, because they are from the shared inventive field of voltage ramp generators for display devices.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use **Cheng's** energy recovery circuitry with **Yeo, Koyama**, and **Maurice's** combined EL display, so as to minimize resistive losses attributable to high instantaneous currents.

Should it be shown that the combination of **Yeo, Koyama, Maurice** and **Cheng** discloses an *alternating current dielectric electroluminescent display column driver*, as instantly claimed, with insufficient specificity:

Stewart discloses gray scale column driver circuit [e.g., Fig. 2] for an alternating current dielectric electroluminescent display comprising rows [e.g., Fig. 2: 114], columns [e.g., Fig. 2: 116] and pixels [e.g., Fig. 2: 108] at the intersections of said rows and columns,

said column driver circuit comprising:

a column driver [e.g., Fig. 2: 126] receiving a ramping voltage [e.g., Fig. 3a] and in response applying alternating polarity driving pulses [e.g., Fig. 3d] to the columns of said dielectric electroluminescent display,

wherein said ramping voltage determines a maximum voltage of the alternating polarity driving pulses applied to the columns of said dielectric electroluminescent display (*see the entire document, including Column 5, Line 38 - Column 12, Line 48*).

Yeo, Koyama, Maurice, Cheng and **Stewart** are analogous art, because they are from the shared inventive field of voltage ramp generators for display devices.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use *Stewart's* buffer with *Yeo, Koyama, Maurice, Cheng's* combined EL display, so as amplify the column signals to appropriate output levels and hide visual artifacts.

Should it be shown that the combination of *Yeo, Koyama, Maurice, Cheng* and *Stewart* still discloses an *electroluminescent display*, as instantly claimed, with insufficient specificity:

Uskali discloses an alternating current dielectric electroluminescent display [e.g., Fig. 3: 130 + 140] (see the entire document, including Column 2, Line 24 - Column 8, Line 50).

Yeo, Koyama, Maurice, Cheng, Stewart, and *Uskali* are analogous art, because they are from the shared inventive field of voltage ramp generators for display devices.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use *Uskali's* EL backlight with *Yeo, Koyama*, and *Maurice's* combined liquid crystal display (resulting in an "alternating current dielectric electroluminescent display," as instantly claimed), so as provide a small, light weight backlight allowing the display image to be seen in the dark.

Regarding claim 3, *Yeo* discloses said counter is an 6-bit counter(see the entire document, including Figs. 2A & 2B; Column 1, Lines 5-64).

However, the examiner takes official notice that it would have been within the skill of the average artisan to replace a 6-bit counter with an 8-bit counter, so as to delineate said time

interval to define more (e.g., 256) display gradations, improving the quality of the displayed image, and enhancing compatibility with higher resolution input image data.

Regarding claim 16, **Yeo** discloses said column driver comprises a counter [e.g., Fig. 1: 2] and a sample-and-hold circuit [e.g., Fig. 1: 1] (*see the entire document, including Figs. 2A & 2B; Column 1, Lines 5-64*).

Koyama discloses said column driver comprises a counter [e.g., Fig. 7A: 701] and a sample-and-hold circuit [e.g., Fig. 7A: 706-708] (*see the entire document, including Figs. 2A & 2B; Column 6, Line 28 - Column 12, Line 25*).

Regarding claim 17, **Maurice** discloses said voltage ramp generator generates a first ramping voltage when a positive voltage [e.g., Fig. 3: $Li = +20V$] is applied to a row of said display and generates a second ramping voltage when a negative voltage [e.g., Fig. 3: $Li = -10V$] is applied to a row of said display (*see the entire document, including Column 5, Lines 24-29*).

Stewart discloses said voltage ramp generator generates a first ramping voltage when a positive voltage [e.g., Fig. 3b: $Deselect\ Level = +8V$] is applied to a row of said display and generates a second ramping voltage when a negative voltage [e.g., Fig. 3b: $Select\ Level = -3V$] is applied to a row of said display (*see the entire document, including Column 5, Line 38 - Column 12, Line 48*).

Regarding claim 5, *Yeo* discloses said non linear analogue voltage ramp generator further comprises an integrator circuit [e.g., *Fig. 1; electrode A input to transistors 3 through column C*] and

at least two current sources [e.g., *Fig. 1; three transistors 3*] generating and applying currents to said integrator circuit such that when a first one of said current sources [e.g., *Fig. 1; first transistor 3*] is connected to said integrator circuit said convex portion of said ramping voltage is generated,

when said at least two current sources are connected in parallel to said integrator circuit a transition portion of said ramping voltage between said convex portion and said concave portion is generated, and

when a second one of said current sources [e.g., *Fig. 1; second transistor 3*] is connected to said integrator circuit said concave portion of said ramping voltage is generated (*see the entire document, including Figs. 2A & 2B; Column 1, Lines 5-64*).

Regarding claim 6, *Yeo* discloses said first one of said current sources generates a current that decreases during said time interval [e.g., *going from the peak to the end*], and

said second one of said current sources generates a current that increases during said time interval [e.g., *going from the start to the peak*] (*see the entire document, including Figs. 2A & 2B; Column 1, Lines 5-64*).

Regarding claim 7, **Yeo** discloses said at least two current sources are time-dependent voltage feedback controlled current sources [e.g., *Fig. 1; controlled by counters 2*] (*see the entire document, including Figs. 2A & 2B; Column 1, Lines 5-64*).

Regarding claim 10, **Yeo** discloses said non linear analogue voltage ramp generator further comprises a frame polarity control circuit selecting between said first ramping voltage for said positive row voltage [e.g., *Fig. 2A; first ramp*] and said second ramping voltage for said negative row voltage [e.g., *Fig. 2A; second ramp*] (*see the entire document, including Figs. 2A & 2B; Column 1, Lines 5-64*).

Maurice discloses said non linear analogue voltage ramp generator further comprises a frame polarity control circuit selecting between said first ramping voltage for said positive row voltage and said second ramping voltage for said negative row voltage (*see the entire document, including Column 5, Lines 24-29*).

Stewart discloses said non linear analogue voltage ramp generator further comprises a frame polarity control circuit selecting between said first ramping voltage for said positive row voltage and said second ramping voltage for said negative row voltage (*see the entire document, including Column 5, Line 38 - Column 12, Line 48*).

Regarding claim 9, *Yeo* discloses said non linear analogue voltage ramp generator further comprises a threshold control circuit for controlled switching [e.g., *Fig. 1; 3*] of said at least two current sources (*see the entire document, including Figs. 2A & 2B; Column 1, Lines 5-64*).

Regarding claim 12, *Yeo* discloses said threshold control circuit further includes a control input setting a transition voltage between said convex and concave portions of said ramping voltage (*see the entire document, including Figs. 2A & 2B; Column 1, Lines 5-64*).

Response to Arguments

16. Applicant's arguments filed on 22 March 2010 have been fully considered but they are not persuasive.

In response to applicant's argument that *Yeo's* "voltage is not applied to a column driver as claimed," (see page 7 of the 22 March 2010 Response) a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In response to applicant's arguments, the recitation "a gray scale column driver circuit for an alternating current dielectric electroluminescent display" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a

structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

In response to applicant's argument that "*it would not be possible to apply the Yeo voltage directly to the columns of an electroluminescent display*" (see page 7 of the Response filed on 22 March 2010) a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Applicant's arguments with respect to *claims 1, 3, 5-7, 9, 10, 12, 16, and 17* have been considered but are moot in view of the new ground(s) of rejection.

By such reasoning, rejection of the claims is deemed necessary, proper, and thereby maintained at this time.

Conclusion

17. Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571) 272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff Piziali/
Primary Examiner, Art Unit 2629
15 June 2010